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REPORT ON INSECT CONTROL

CAMP NELSON PROJECT

SEQUOIA NATIONAL FOREST

by

DON LEWIS
Head Spotter

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Camp Nelson,
Springville, Calif.
October 20, 1933

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Introduction

With a preliminary inspection of the Camp Nelson area on the Sequoia National Forest in the early summer of 1933, all visible indications pointed toward a serious insect infestation of epidemic proportions. On this basis two men were detailed to make a more intensive survey of the area, to secure data on which to base recommendations for fall control work.

Two permanent 160-acre plots were established, one in the ponderosa pine type of the basin, and one in the ponderosa-sugar pine type of the higher slopes. A 100% cruise of the 1931, 1932 and 1933 trees was made of each of these plots, and an ocular survey of the entire area.

On the basis of the data secured, the infestation was considered serious enough to warrant immediate control work. Actual control was begun August 7, 1933, using men from the Quaking Aspen ECW camp. The solar heat method of control was used exclusively. Control work ceased September 20, due to the ineffectiveness of solar heat treatment.

With the termination of the summer control work the sample plots were resurveyed. Tentative plans were to continue control work as soon as burning was feasible. Due to the uncertainty as to whether ECW labor would be available, these plans were abandoned.

In anticipation of control work in the near future, additional data concerning infestation trends in the untreated area of the project was deemed advisable. Such data were secured by strip surveys, topographic counts and stem analysis of infested trees.

Location of Control Project

The entire Camp Nelson basin embraces an area of approximately 8,000 acres. This area is located along the 5th Standard Parallel South MDM--Ts 20 and 21 S and Rs 31 and 32 E. The entire project is a natural entomological unit which comprises the whole timbered basin at the headwaters of the South Fork of the Middle Fork of the Tule River.

The rim of the basin averages 7,000 feet and is in the fir-type zone. An exception to this is found at the head of Coy Creek, where many Big Trees are mixed with the fir. These timber types form a barrier to the beetles. The lower boundary borders on the brush and woodland type of the Upper Sonoran Zone, which again is a natural barrier.

Timber Types

The bottom of the basin, or Nelson Flat, which is at an elevation of approximately 5,000 feet, is ponderosa pine with some oak, and incense cedar. Higher up along the river big tree predominates with sugar pine, ponderosa pine and incense cedar in mixture. Up the steep slopes from the river big tree becomes more scarce, with its upper limit at about 6,000 feet elevation. As the elevation increases the percentage of sugar pine increases with its maximum at about 6,400 feet elevation, where it comprises about 15% of the stand. In this belt is found a true ponderosa-sugar pine type. Toward the upper limits Jeffrey pine replaces ponderosa pine.

One exception to the above general types is found on the lower slopes of the Bear and Coy Creek Basins. Here oak and other brush species predominate to form a woodland type of cover.

Land Status

Approximately 50% of the land included in the project is national forest land. The patented land may be classified into two main divisions; namely summer homes and timber holdings. The majority of the summer homes are concentrated on 160 acres in the bottom of the basin. Adjoining the patented land around Nelson Flat there is a considerable area of national forest land set aside for special use. This area is fast becoming very important as a recreational center. The timber holdings include the better timber on the slopes of the basin. Protection of this area is justified when considering its recreational value alone, exclusive of timber values.

SUMMER CONTROL PROJECT--1933

Description of Area

Approximately 50% of the Camp Nelson project area was covered by the summer control work. The work was confined to the bottom of the basin, or Nelson Flat, and to the south slopes of the basin mainly because of the limited time the solar heat treatment is effective. Also, in this particular case the Camp Nelson-Quaking Aspen road is located on the south slopes of the basin, and made this area more accessible. Several trees high up on the south slopes were left because of inaccessibility, due to the short working day. A good kill was secured on the south slopes by solar heat treatment much later in the season than was anticipated. In view of this fact control work was carried into the sugar pine type toward the head of the basin, rather than working on the north slopes lower down where maximum solar radiation could not be secured.

Supervision

The control work was directed by a control and spotter foreman which were attached to the Quaking Aspen CCC camp.

Spotting

The spotting was done almost entirely by a spotter foreman, a few new trees being picked up by the control foreman and treating crews. Trees were spotted only a few days ahead of the treating crews, due to the rapidly changing condition of the trees marked. A considerable amount of the spotter foreman's time was devoted to locating, and supervision of the inexperienced treating crews. The contour method of spotting was used exclusively.

Transportation

Transportation was supplied by a Forest Service 1½-ton Chev. truck from the Quaking Aspen ECW camp. It was assigned permanently to the insect control crew, with driver. Costs beyond that of the driver are not shown below because of lack of data.

Crews

The treating crews were made up of men drawn from the ECW camp. Each crew was composed of four men--2 fallers and 2 treaters. The treaters assisted the fallers in peeling and limbing as well as brushing out along the log and laying out the bark.

Treatment

Control work was started on Nelson Flat proper. The trees in this area were mostly large scattered ponderosa pine infested with D.brevicomis. There was no marked tendency to form large groups. The treatment was carried into the Nelson and Belknap Creek drainages with the expectation that the treatment by solar heat would be ineffective by the time these areas were covered. These areas were the most heavily infested of any in the basin. There was a definite tendency toward large groups, which pointed toward an active infestation. Daily check-ups on the kill showed satisfactory results after this area was completed. Control work was then extended to include the McIntyre and Boulder Creek drainages, which were completed.

Treatment was terminated on September 20, because it was found that the kill was dropping below 80% of the brood. The kill for D.brevicomis in ponderosa pine had become unsatisfactory about a week before the above date, but the last trees treated were sugar pine, as shown by the map. The greater exposure of D.monticolae in sugar pine gave a higher per cent of kill than for D.brevicomis, and allowed the work to be carried on a few days longer.

Table No. 1
Showing Weekly Costs and Progress of the Summer Control Project
1933

Date Week Ending	No. Trees Cumulative	Board Feet Cumulative	Man-Days Treating	Man-Days Truck Driver	Total Man-Days	Man-Days per Tree	Man-Days per MBM	Cost[1] per Tree	Cost[1] per MBM	Spotting-Supervision[2] Cumulative Cost	Tot. Cost per Tree[3]	Tot. Cost per MBM[3]
Aug. 12	26	23,180	57	5	62	2.40	2.67	4.46	5.00	53.55	2.06	2.30	6.52	7.30
" 19	43	47,010	112	9	121	2.80	2.60	5.37	4.81	98.18	2.28	2.09	7.65	6.90
" 26	62	83,530	187	14	201	3.24	2.40	6.06	4.50	151.73	2.45	1.81	8.51	6.31
Sep. 2	97	123,460	261	19	280	2.88	2.27	5.40	4.24	205.38	2.12	1.66	7.52	5.90
" 9	112	167,660	316	23	339	3.01	2.02	5.66	3.19	258.93	2.31	1.54	7.97	4.73
" 16	121	209,990	385	[redacted]	415	3.41	1.97	6.38	3.68	312.48	2.58	1.49	8.96	5.17
" 20[6]	126	239,170	412	31	443	3.50	1.85	6.57	3.46	330.24	2.69	1.44	9.26	4.90

[1]The cost per man-day is $1.87 which includes $30 a month wages and 33-1/3¢ per day for subsistence, based on a 5-day week and a 30-day month. This does not include clothes, camp expenses etc. The cost of supervision and spotting are not included in the costs in this column.

[2]The cost of supervision and spotting was figured on the basis of $53.55 per week for an insect control foreman and a spotter foreman. This includes subsistence.

[3]The total costs here include both supervision and spotting and treating.

[4]Crew and foremen spent one day of this week on fire suppression.

[5]This week one day short because of holiday. Costs figured with 5½ days for foremen and 4 days for treating crew so they can be compared to costs on per diem basis for treaters.

[6]Control work terminated on September 20 which made this week only 3 days.

Note: the data taken were insufficient to separate the cost of treating the different species of trees.

Summary of Costs

The average costs for the summer control project as shown by Table 1 are $9.26 per tree or $4.90 per thousand board feet. Both the cost per tree and the cost per thousand board feet are excessive. These costs do not include transportation of men, transportation of supplies, saw filing, cook's wages and camp overhead. This can be attributed both to natural conditions and inexperienced labor. The main reasons are as follows:

1. The trees were fairly well scattered and the topography steep and rough;

2. Nonproductive truck driver whose duty was to drive truck only; this cost about 45 cents per tree;

3. Crews were entirely inexperienced and not used to hard work. They had to be trained, which was a slow process with the men available;

4. Crews were broken up by camp details; sometimes only one man out of a 4-man crew would report for work;

5. Equipment was lacking in quantity and quality. It was necessary in several cases to build scaffolds because the saws were too short;

6. The travel time after the men left the trucks, expressed as a per cent of the hours worked, was excessive, due to the six-hour day.

Table No. 2

Distribution of Treated Trees as to Land Ownership

National Forest Land				Patented Land			
Ponderosa Pine		Sugar Pine		Ponderosa Pine		Sugar Pine	
No. Trees:	MBM	No. Trees:	MBM	No. Trees:	MBM	No. Trees:	MBM
68	50.74	8	47.88	37	67.90	15	67.33

Total acreage treated - - 4,200 (approximately)
Nat.For. " " - - -2,000 "
Patented " " - - 2,000 "

Treating on Private Land

Summer control work on the Camp Nelson Project consisted of treating all infested trees regardless of land ownership. On privately-owned land, however, permission of the owner was secured before treating infested trees on his property. As a whole, the reaction of the private

land owners contacted was very favorable toward the control work. One point in favor of the control work in this area is that it has succeeded in making the private owners "insect-minded". As a result there should be less opposition in the future for cooperation on insect control than has been experienced in the past.

Conclusion

It is quite evident that the costs of the summer control work on the Camp Nelson Project are prohibitive when based on timber values or costs of similar projects in the past. However, basing the values concerned on recreational use, now and in the future, higher control costs are justifiable. Also, in my judgment, a project handled in the usual way would reduce the cost by almost half.

The summer control work did reduce the number of beetles in the heavily-infested areas and in the Camp Nelson Recreational Area. Only a limited number of trees have shown in these areas up to date. The large groups earlier in the summer indicated an epidemic, while the absence of any new large groups indicates a slowing-up of the attack. This objective, as well as providing work for ECW labor, was the primary consideration when summer control on this area was started.

Due to the limited time that solar-heat treatment was effective, only the south slopes of the basin and Nelson Flat were treated. At the date of writing (October 20, 1938) sufficient new fades are showing up on both north and south slopes to indicate that the infestation is still serious. The summer control project should be followed up with a fall or spring project in order to clean up the area. The above recommendation is based mainly on the recreational value of the area, with due regard to watershed and timber values.

R. 31 E

R. 32 E.

T19S

T20S

T21S

28

27

26

25

30

33

34

35

36

31

3

1

6

Nelson Creek

Nelson Flat

Store

Hotel

Post Office

Beltner Creek

McIntire Creek

Bowler Creek

SOUTH FORK OF MIDDLE FORK OF

TULE RIVER

5th Standard

Pack Station

Camp F106

52-67
122-6

32-47

80-104

126-31

17-25

1-5
11-12

13-14

28-30

155-6

INSECT CONTROL

SEQUOIA NATIONAL FOREST

CAMP NELSON UNIT

SOLAR HEAT TREATMENT - SUMMER 1933

CONTROL WORK BY C.C.C. PERSONNEL

Scale — 4" = 1 mile

MAP BY - WAYNE B. READ

Mag. Dec'l 17°45'

~ LEGEND ~

+ SUGAR PINE

• PONDEROSA PINE

J JEFFREY PINE

—"— SPOTTING BOUNDARY